REMARKS

Claims 9, 10, 12, 13, 15, 16 and 22-31 are pending. By this Amendment, claim 9 is amended and no new claims are added.

The Examiner rejects claims 9, 10, 12, 13, 15, 16, and 22 - 31 under 35 USC 103(a) as obvious based on Forrest et al. (US 6,398,883) in view of Thomas et al. (WO 93/10935). Applicant respectfully traverses this rejection. Forrest discloses a method for enhancing the strength, toughness and fatigue resistance of individual structural elements in the regions subjected to comparatively high operational stress [Col 3; lines 49-54]. Thus reliance on Forrest as a reference for joining work pieces together is misplaced. The text actually referred to by the Examiner only mentions as an aside that the "structural member can then be secured to other structural members to form the frame of an aircraft" [Col 3, lines 45-47]. Moreover, Applicant challenges the Examiners characterization that the "insert" 51a teaches the steps of welding work pieces together. Forrest at Col 11, lines 26-56 describes that the insert is basically a liner for an aperture, that it is preferably made from a different material, that the insert is pressed or slip fit onto the work piece, and that the insert and work-piece are subjected to friction stir welding process **after** joining them together (emphasis added). Thus the rejection based on the properties of the insert does not make obvious the present invention.

The Examiner further admits that Forrest fails to teach the step of friction stir welding a region of both components before fusion welding and thus looks to Thomas. Thomas is one of the earliest patents concerning friction stir welding, all it discloses is simply the technique of "friction stir welding" in various guises. The Examiner noted that Thomas is interpreted such that the resistance heating occurs concurrently or after the plasticizing step. Such an

interpretation is incorrect. In Thomas, it is the probe that undergoes resistive heating. The resistive heating of the welding probe before insertion into the work piece cannot and would not effect any fusion welding: the probe blade performs friction welding. The "pre-heating" (page 8, line 34) of the probe merely assists in this process. It is thus erroneous to characterize Thomas as a "hybrid bonding process." Further, Thomas does not read on the step of preparing regions of two surfaces prior to fusion welding.

None of the art cited actually discloses a method whereby the fusion welding process acts to weld together one previously friction stir welded surface and another previously friction stir welded surface. Thus the Examiner has not met the burden of considering the claimed invention as a whole. See MPEP 2141.02 (I).

Likewise, with respect to claim 22, the Examiner has failed to disclose what art supports the rejection regarding the step of "skimming the friction stir welded region...". Thus claim 22 is assumed to include patentable subject matter.

Applicant respectfully states that the rejection of claim 27, which depends on claim 23, is moot in view of the argument presented above.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

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